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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
COPPINS, JANET L	

ART UNIT	PAPER NUMBER
1625	

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/044,869	SHAYMAN, JAMES A.	
	Examiner	Art Unit	
	Janet L. Coppins	1625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10,12-22,24-30 and 32-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-10,12-22,24-30 and 32-36* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-31 pending in the instant application.

Response to Amendment/

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 9, 2004 has been entered.

2. Receipt is acknowledged of Applicants' Amendment, submitted April 9, 2004, which has been reviewed by the Examiner and entered of record in the file. Accordingly, claims 11, 23, and 31 have been cancelled, claims 1, 3, 6, 8-10, 12, 14, 15, 18, 20, 21, 22, 24, and 26-30 have been amended, and new claims 32-36 have been added. In view of Applicants' broad scope, vast number of compounds claimed, cancellations of some of the original claims, and introduction of new claims, the Examiner places the following Restriction Requirement on the instant claims.

Election/Restrictions

3. The Markush group set forth in the claims includes both independent and distinct inventions, and patentably distinct compounds (or species) within each invention. However, this application discloses and claims a plurality of patentably distinct inventions far too numerous to list individually. Moreover, each of these inventions contains a plurality of patentably distinct compounds, also far too numerous to list individually. For these reasons provided below, restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claim 2, as well as claims 1, 3-5, and 35, (in part),drawn to compounds according to claim 1, wherein R^3 is the cyclic tertiary amine pyrrolidine, classified in various subclasses of class 548. A further election of a single disclosed species will be required if this Group is elected.

II. Claims 1, 3-5, and 35, (all in part), drawn to compounds according to claim 1, wherein R^3 is the cyclic tertiary amine azetidine, classified in various subclasses of class 548. A further election of a single disclosed species will be required if this Group is elected.

III. Claims 1, 3-5, and 35, (all in part), drawn to compounds according to claim 1, wherein R^3 is the cyclic tertiary amine morpholine, classified in various subclasses of class 544. A further election of a single disclosed species will be required if this Group is elected.

IV. Claims 1, 3-5, and 35, (all in part), drawn to compounds according to claim 1, wherein R^3 is the cyclic tertiary amine piperidine, classified in various subclasses of class 546. A further election of a single disclosed species will be required if this Group is elected

V. Claims 1, 3-5, and 35, (all in part), drawn to compounds according to claim 1, wherein R^3 is an acyclic tertiary amine, not covered by the above-mentioned Groups, classified in various subclasses of class 564. A further election of a single disclosed species will be required if this Group is elected.

VI. Claim 6, drawn to a method of using a compound according to claim 1, for inhibiting the growth of cancer cells in a mammal, classified in various subclasses

of class 514. A further election of a single disclosed species will be required if this Group is elected.

VII. Claim 7, drawn to a method of using a compound according to claim 1, for treating a patient having sphingolipidosis, classified in various subclasses of class 514. A further election of a single disclosed species of compound will be required if this Group is elected.

VIII. Claim 8, drawn to a method of using a compound of claim 1 for treating a patient having a microbial or viral infection, classified in various subclasses of class 514. A further election of a single disclosed species of compound will be required if this Group is elected, in addition to an election of a single disclosed microbial or viral infection.

IX. Claim 9, drawn to a method of using a compound according to claim 1 for treating a patient having a drug resistant tumor, classified in various subclasses of class 514. A further election of a single disclosed species of compound will be required if this Group is elected.

X. Claim 10, drawn to a method of using a compound according to claim 1 for reducing tumor angiogenesis, classified in various subclasses of class 514. A further election of a single disclosed species of compound will be required if this Group is elected.

XI. Claim 13, as well as claims 12, 14-17, and 36, (in part), drawn to compounds according to claim 12, wherein R^3 is the cyclic tertiary amine pyrrolidine,

classified in various subclasses of class 548. A further election of a single disclosed species will be required if this Group is elected.

XII. Claims 12, 14-17, and 36, (all in part), drawn to compounds according to claim 12, wherein R^3 is the cyclic tertiary amine azetidine, classified in various subclasses of class 548. A further election of a single disclosed species will be required if this Group is elected.

XIII. Claims 12, 14-17, and 36, (all in part), drawn to compounds according to claim 12, wherein R^3 is the cyclic tertiary amine morpholine, classified in various subclasses of class 544. A further election of a single disclosed species will be required if this Group is elected.

XIV. Claims 12, 14-17, and 36, (all in part), drawn to compounds according to claim 12, wherein R^3 is the cyclic tertiary amine piperidine, classified in various subclasses of class 546. A further election of a single disclosed species will be required if this Group is elected

XV. Claims 12, 14-17, and 36, (all in part), drawn to compounds according to claim 12, wherein R^3 is an acyclic tertiary amine, not covered by the above-mentioned Groups, classified in various subclasses of class 564. A further election of a single disclosed species will be required if this Group is elected.

XVI. Claim 18, drawn to a method of using a compound according to claim 12, for inhibiting the growth of cancer cells in a mammal, classified in various subclasses of class 514. A further election of a single disclosed species will be required if this Group is elected.

XVII. Claim 19, drawn to a method of using a compound according to claim 12, for treating a patient having sphingolipidosis, classified in various subclasses of class 514. A further election of a single disclosed species of compound will be required if this Group is elected.

XVIII. Claim 20, drawn to a method of using a compound of claim 12 for treating a patient having a microbial or viral infection, classified in various subclasses of class 514. A further election of a single disclosed species of compound will be required if this Group is elected, in addition to an election of a single disclosed microbial or viral infection.

XIX. Claim 21, drawn to a method of using a compound according to claim 12 for treating a patient having a drug resistant tumor, classified in various subclasses of class 514. A further election of a single disclosed species of compound will be required if this Group is elected.

XX. Claim 22, drawn to a method of using a compound according to claim 12 for reducing tumor angiogenesis, classified in various subclasses of class 514. A further election of a single disclosed species of compound will be required if this Group is elected.

XXI. Claims 24 (in part), and 25, drawn to a compound according to claim 24, wherein R^3 is the cyclic tertiary amine pyrrolidine, classified in various subclasses of class 548. A further election of a single disclosed species will be required if this Group is elected.

XXII. Claim 24 (in part), drawn to compounds according to claim 24, wherein R^3 is the cyclic tertiary amine azetidine, classified in various subclasses of class 548. A further election of a single disclosed species will be required if this Group is elected.

XXIII. Claim 24 (in part), drawn to compounds according to claim 24, wherein R^3 is the cyclic tertiary amine morpholine, classified in various subclasses of class 544. A further election of a single disclosed species will be required if this Group is elected.

XXIV. Claim 24(in part), drawn to compounds according to claim 24, wherein R^3 is the cyclic tertiary amine piperidine, classified in various subclasses of class 546. A further election of a single disclosed species will be required if this Group is elected

XXV. Claim 24 (in part), drawn to compounds according to claim 24, wherein R^3 is an acyclic tertiary amine, not covered by the above-mentioned Groups, classified in various subclasses of class 564. A further election of a single disclosed species will be required if this Group is elected.

XXVI. Claim 26, drawn to a method of using a compound according to claim 26, for inhibiting the growth of cancer cells in a mammal, classified in various subclasses of class 514. A further election of a single disclosed species will be required if this Group is elected.

XXVII. Claim 27, drawn to a method of using a compound according to claim 27, for treating a patient having sphingolipidosis, classified in various subclasses of class

514. A further election of a single disclosed species of compound will be required if this Group is elected.

XXVIII. Claim 28, drawn to a method of using a compound of claim 28 for treating a patient having a microbial or viral infection, classified in various subclasses of class 514. A further election of a single disclosed species of compound will be required if this Group is elected, in addition to an election of a single disclosed microbial or viral infection.

XXIX. Claim 29, drawn to a method of using a compound according to claim 29 for treating a patient having a drug resistant tumor, classified in various subclasses of class 514. A further election of a single disclosed species of compound will be required if this Group is elected.

XXX. Claim 30, drawn to a method of using a compound according to claim 30 for reducing tumor angiogenesis, classified in various subclasses of class 514. A further election of a single disclosed species of compound will be required if this Group is elected.

XXXI. Claim 32, drawn to a method of using compounds according to claim 1 for treating a microbial or viral infection, wherein the infection is due to E. Coli, influenza A, or a verotoxin-producing organism, classified in various subclasses of class 514. A further election of a single disclosed species will be required if this Group is elected, in addition to an election of a single disclosed infection.

XXXII. Claim 33, drawn to a method of using compounds according to claim 12 for treating a microbial or viral infection, wherein the infection is due to E. Coli,

influenza A, or a verotoxin-producing organism, classified in various subclasses of class 514. A further election of a single disclosed species will be required if this Group is elected, in addition to an election of a single disclosed infection.

XXXIII. Claim 34, drawn to a method of using compounds according to claim 28 for treating a microbial or viral infection, wherein the infection is due to E. Coli, influenza A, or a verotoxin-producing organism, classified in various subclasses of class 514. A further election of a single disclosed species will be required if this Group is elected, in addition to an election of a single disclosed infection.

In addition to an election of one of the above Groups, restriction is further required under 35 U.S.C. 121 as follows:

4. In accordance with the decisions in ***In re Harnisch***, 631 F.2d 716, 206 USPQ 300 (CCPA 1980); and ***Ex parte Hozumi***, 3 USPQ2d 1059 (Bd. Pat. App. & Int. 1984), restriction of a Markush group is proper where the compounds within the group either (1) do not share a common utility, or (2) do not share a substantial structural feature disclosed as being essential to that utility. In addition, a Markush group may encompass a plurality of independent and distinct inventions where two or more members are so unrelated and diverse that a prior art reference anticipating the claim with respect to one of the members would not render the other members obvious under 35 U.S.C. 103.

5. Where an election of any one of Groups I-XXXIII is made, an election of a single disclosed compound (in the specification) is further required, including an exact definition of each substituent on the base molecule (the formula of claim 1), wherein a **single member** at each substituent group or moiety is selected. The scope of an independent invention will encompass

all compounds within the scope of the above-identified Group that the elected compound falls within (compounds which are so similar thereto as to be within the same inventive concept and reduction to practice). Examination will then proceed on the elected compound AND the entire scope of the invention encompassing the elected species, as defined by the above Groups and common classification. Should applicant traverse on the ground that the compounds are not patentable distinct, applicant should submit evidence now of record showing the compounds to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other.

All compounds falling outside the class(es) and subclass(es) of the selected compound and other compounds encompassed by the elected Group above will be directed to nonelected subject matter and will be withdrawn from consideration under 35 U.S.C. 121 and 37 C.F.R. 1.142(b). Applicant may reserve the right to file divisional applications on the remaining subject matter. (The provisions of 35 U.S.C. 121 apply with regard to double patenting covering divisional applications).

6. Markush claims must be provided with support in the disclosure for each member of the Markush group. See MPEP 608.01(p). Applicant should exercise caution in making a selection of a single member for each substituent group on the base molecule to be consistent with the written description.

Rationale Establishing Patentable Distinctiveness Within Each Group

7. Each Group listed above is directed to or involves the use of compounds which are recognized in the art as being distinct from one another because of their diverse chemical

structure, their different chemical properties, modes of action, different effects and reactive conditions (MPEP 806.04, MPEP 808.01). Additionally, the level of skill in the art is not such that one invention would be obvious over either of the other inventions (Groups), i.e. they are patentable over each other. Chemical structures that are similar are presumed to function similarly, whereas chemical that are not similar are not presumed to function similarly. The presumption even for similar chemical structures though is not irrefutable, but may be overcome by scientific reasoning or evidence showing that the structure of the prior art would not have been expected to function as the structure of the claimed invention. Note that in accordance with the holdings of **Applications of Papesch**, 50 CCPA 1084, 315 F.2d 381, 137 USPQ 43 (CCPA 1963) and **In re Lalu**, 223 USPQ 1257 (Fed. Cir, 1984), chemical structures are patentably distinct where the structures are either not structurally similar, or the prior art fails to suggest a function of a claimed compound would have been expected from a similar structure.

The above Groups represent general areas wherein the inventions are independent and distinct, each from the other because of the following reasons:

8. Inventions I-V, XI- XV, and XX-XXV are related to Inventions VI-XX, XVI-XIX, and XXVI-XXXIII as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the product as claimed can be used in a another materially different process of using that product, i.e. there are many uses known in the art, for example, for treating certain types of cancers,

collagen vascular disorders, atherosclerosis, and renal hypertrophy in diabetic patients. Therefore separate search conditions are involved, which would impose a burden if unrestricted.

9. The Inventions of Groups I-V are related as mutually exclusive species in the Markush group of formula (I). Inventions I-V are distinct and independent from each other because the compounds differ structurally, one from the other as defined by the different variables recited in claim 1. For example, within formula I, the variables R^3 alone have many separate, generic possibilities, including distinct heterocyclic ring systems, which cannot be said to belong to the same class and subclass of chemical classification.

10. The compounds of Inventions I-V are distinct and independent from each of Inventions XI- XV and XX-XXV. In this instance, the claims of Inventions I-V, XI-XV, and XX-XXV recite similar structures of ceramide-like compounds. The compounds differ structurally, one from the other as defined by the different formulae of claims 1, 12, and 24. Absent factual evidence to the contrary, each is a different chemical compound.

In addition, because of the plethora of classes and subclasses in each of the Groups, a serious burden is imposed on the Examiner to perform a complete search of the defined areas.

Therefore, because of the reasons given above, the restriction set forth is proper and not to restrict would impose a serious burden in the examination of this application.

11. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Groups II, and is not required for Groups III-XXXIII, etc., restriction for examination purposes as indicated is proper.

Advisory of a Rejoinder

12. The following is a recitation of MPEP 821.04, Rejoinder:

Where product and process claims drawn to independent and distinct inventions are presented in the same application, applicant may be called upon under 35 U.S.C. 121 to elect claims to either the product or process. See MPEP § 806.05(f) and § 806.05(h). The claims to the nonelected invention will be withdrawn from further consideration under 37 CFR 1.142. See MPEP § 809.02(c) and § 821 through § 821.03. However, if applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims which depend from or otherwise include all the limitations of the allowable product claim will be rejoined.
Where the application as originally filed discloses the product and the process for making and/or using the product, and only claims directed to the product are presented for examination, when a product claim is found allowable, applicant may present claims directed to the process of making and/or using the patentable product by way of amendment pursuant to 37 CFR 1.121. In view of the rejoinder procedure, and in order to expedite prosecution, applicants are encouraged to present such process claims, preferably as dependent claims, in the application at an early stage of prosecution. Process claims which depend from or otherwise include all the limitations of the patentable product will be entered as a matter of right if the amendment is presented prior to final rejection or allowance. Amendments submitted after final rejection are governed by 37 CFR 1.116. Process claims which do not depend from or otherwise include the limitations of the patentable product will be withdrawn from consideration, via an election by original presentation (see MPEP § 821.03). Amendments submitted after allowance are governed by 37 CFR 1.312. Process claims which depend from or otherwise include all the limitations of an allowed product claim and which meet the requirements of 35 U.S.C. 101, 102, 103, and 112 may be entered.

Where product and process claims are presented in a single application and that application qualifies under the transitional restriction practice pursuant to 37 CFR 1.129(b), applicant may either: (A) elect the invention to be searched and examined and pay the fee set forth in 37 CFR 1.17(s) and have the additional inventions searched and examined under 37 CFR 1.129(b)(2); or (B) elect the invention to be searched and examined and not pay the additional fee (37 CFR 1.129(b)(3)). Where no additional fee is paid, if the elected invention is directed to the product and the claims directed to the product are subsequently found patentable, process claims which either depend from or include all the limitations of the allowable product will be rejoined. If applicant chooses to pay the fees to have the additional inventions searched and examined pursuant to 37 CFR 1.129(b)(2) even if the product is found allowable, applicant would not be entitled to a refund of the fees paid under 37 CFR 1.129(b) by arguing that the process claims could have been rejoined. 37 CFR 1.26(a) states that "[T]he Commissioner may refund any fee paid by mistake or in excess of that required. A change of purpose after the payment of a fee...will not entitle a party to a refund of such fee..." In this case, the fees paid under 37 CFR 1.129(b) were not paid by mistake nor paid in excess, therefore, applicant would not be entitled to a refund. In the event of rejoinder, the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103, and 112. If the application containing the rejoined claims is not in condition for allowance, the subsequent Office action may be made final, or, if the application was already under final rejection, the next Office action may be an advisory action.

13. The following is a recitation from paragraph five, "Guidance on Treatment of Product and Process Claims in light of *In re Ochiai, In re Brouwer* and 35 U.S.C. 103(b)" (1184 TMOG 86(March 26, 1996)):

"However, in the case of an elected product claim, rejoinder will be permitted when a product claim is found allowable and the withdrawn process claim **depends from or otherwise includes all of the limitations**

of an allowed product claim. Withdrawn process claims not commensurate in scope with an allowed product claim will not be rejoined." (emphasis added)

Therefore, in accordance with MPEP 821.04 and In re Ochiai, 71 F. 3d 1565, 37 USPQ 1127 (Fed. Cir. 1995), rejoinder of product claims with process claims commensurate in scope with the allowed product will occur following a finding that the product claims are allowable. Until, such time, a restriction between product claims and process claims is deemed proper. Additionally, in order to retain the right to rejoinder in accordance with the above policy, Applicant is advised that the process claims should be amended during prosecution to maintain either dependency on the product claims or to otherwise include the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.**

14. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

15. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janet L. Coppins whose telephone number is 571.272.0680. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph McKane can be reached on 571.272.0699. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Janet L. Coppins
June 26, 2004

CEILA CHANG
PRIMARY EXAMINER
GROUP ~~1200~~ 1625